

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a crystalline semiconductor film comprising silicon formed over an insulating surface, said crystalline semiconductor film being an active layer of a thin film transistor having at least one of channel, source, drain regions and containing a catalyst for promoting crystallization of silicon,

wherein said catalyst is selected from group IV elements, and

wherein said channel region contains said catalyst at a concentration of  $1 \times 10^{15} - 5 \times 10^{19}$  atoms/cm<sup>3</sup>.